

# Beyond Medicinal Mushrooms: AHCC Breaks the Molecular Weight Barrier

By Sara Lovelady

**T**here's no doubt of the beneficial role medicinal mushrooms can play in supporting human health and well-being. Test tube studies on mushroom species such as shiitake, maitake, and reishi all point to the potential of these fungi to positively impact immune system function. The problem so far has been absorption. The biologically active constituents medicinal mushrooms contain — polysaccharides — are too large to be absorbed efficiently by the human body. That's why the introduction of AHCC in 1987 changed the medicinal mushroom landscape.

## What is AHCC?

AHCC, short for Active Hexose Correlated Compound, is obtained from several subspecies of hybridized medicinal mushroom mycelia. Developed in Japan, AHCC is supported by 29 positive studies published in peer-reviewed scientific journals recognized by the National Institutes of Health. It has become Japan's #1 specialty immune supplement and is becoming increasingly popular in the United States.

What's unique about this proprietary mushroom supplement is that it has solved the absorption problem that plagues other medicinal mushrooms.

## Breaking the Molecular Weight Barrier

In order for anything to be absorbed, it has to be small enough to pass through the lining of the gastro-intestinal tract. That's why medicinal mushrooms in their natural state are poorly absorbed: their biologically active constituent, polysaccharides, have a molecular weight of 200,000 Daltons — too large to slip through the tiny "entryways" of the GI tract with ease.

A group of scientists at the University of

Tokyo solved the absorption problem of medicinal mushroom absorption by breaking the molecular weight barrier. Through the development of a patented fermentation process, they were able to substantially reduce the molecular weight of the polysaccharides in AHCC to a size of only 5,000 Daltons — leading to dramatically increased absorption and efficacy.

## AHCC's Effect on Immunity

Research over the past two decades has uncovered that AHCC is biological response modifier, meaning it turns up the dial on the body's natural immune response. Since the immune system is responsible for protecting against external threats (such as bacterial, viral, and fungal infections) as well as internal threats (such as the unmitigated replication of cancer cells), AHCC has a wide range of clinical uses.

Published human clinical studies have demonstrated that AHCC works by regulating the activity of several types of white blood cells. In multiple studies on immune-compromised patients, AHCC was shown to increase the activity of natural killer (NK) cells, which identify and destroy viruses, bacteria, and abnormal cells. In a double-blind placebo controlled study of 30 healthy adults, AHCC increased the number and activity of dendritic cells (DC), which reside throughout the respiratory tract, fending off foreign invaders as they try to infiltrate the body. The most recently published clinical study, conducted at Yale Medical School, showed that AHCC increased the activity of two specific immune-modulating cytokines — chemical messengers that activate the body's immune response in response to infection.

The efficacy of AHCC was also tested against specific infections in animal mod-

els. Published studies have confirmed that AHCC improves immune response to viruses (including influenza A, N1N1 and West Nile), bacteria (such as *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and methicillin-resistant *Staphylococcus aureus*), and fungal infections (such as *Candida albicans*).

Widely used as a complementary immuno-therapy in Japan, AHCC has been found in multiple clinical studies to prolong survival time in cancer patients, while reducing the side effects of chemotherapy. Two recently completed human studies have also shown that AHCC helps improve the condition of individuals with both viral and non-viral hepatitis C.



While it may sound counter-intuitive, one of the reasons AHCC has been found to be effective for such a broad variety of conditions is that it is not directly anti-viral, anti-bacterial, anti-fungal, or cancer-killing. Rather, AHCC works by dramatically beefing up the number and activity of disease-fighting white blood cells, so the immune system is better equipped to do its job. As a result, AHCC is both extremely dynamic and remarkably free of side effects. To learn more, please visit [www.AHCCresearch.org](http://www.AHCCresearch.org).